

C L A I M S

1. A hydraulic pressure regulating valve for regulating a pressure in an automatic transmission of a motor vehicle, comprising a magnetic part which includes an electrically controllable coil, a coil core and a movable armature; a valve flange which is anchored on said magnetic part and has pressure medium guiding passages; a piston controlling a pressure in a passage connected to a consumer, said piston being loaded with said armature and controlling pressure medium connections between said passages; a diaphragm element which seals said valve flange relative to said magnetic part; means forming a return passage, said diaphragm element having at least one pressure chamber which is hydraulically connected with said return passage; and a throttling device formed so that said pressure chamber is connected with said return passage through said throttling device.

2. A hydraulic pressure regulating valve as defined in claim 1, wherein said pressure chamber is formed in said valve flange.

3. A hydraulic pressure regulating valve as defined in claim 1, wherein said throttling device is formed by a gap between said piston and a wall of a guiding opening in a region between said pressure chamber and said return passage.

4. A hydraulic pressure regulating valve as defined in claim 1, wherein said throttling device is formed by a connecting passage between said pressure chamber and said return passage.

5. A hydraulic pressure regulating valve as defined in claim 4, wherein said connecting passage has at least one orifice opening which is formed directly on said flange.

6. A hydraulic pressure regulating valve as defined in claim 4, wherein said connecting passage has at least one orifice opening which is formed on a separate hat orifice inserted in said connecting passage.

7. A hydraulic pressure regulating valve as defined in claim 1, wherein said connecting passage opens directly into said return passage of said valve flange.

8. A hydraulic pressure regulating valve as defined in claim 1, wherein said valve flange has at least one connection provided at a supply side, at least one connection provided at a working passage side, and at least one connection provided at a return side, and pressure medium connections between said connections forming a control cross-section, said piston having control edges controlling said control cross-section.

9. A hydraulic pressure regulating valve as defined in claim 1, wherein said valve flange has at least one connection at a supply side, at least one connection at a working passage side, and at least one connection at a return side, pressure medium connections between said connections forming a valve seat; and a closing member which controls said valve seat.

TOP SECRET - SOURCE CODE

10. A hydraulic pressure regulating valve as defined in claim 1, wherein said coil core and said armature of said magnetic part are inserted at least partially into an interior of said coil for forming a proportional magnet.

11. A hydraulic pressure regulating valve as defined in claim 1, wherein said diaphragm element is mounted on said valve flange and on said piston.

12. A hydraulic pressure regulating valve as defined in claim 1, wherein said diaphragm element is mounted on said magnetic part and said armature.